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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/762,788	01/22/2004	Samir Chaudhry	CHAUDHRY	6125
47396	7590	09/09/2005	EXAMINER PHAM, LONG	
HITT GAINES, PC AGERE SYSTEMS INC. PO BOX 832570 RICHARDSON, TX 75083			ART UNIT 2814	
PAPER NUMBER				

DATE MAILED: 09/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/762,788

Applicant(s)

CHAUDHRY ET AL.

Examiner

Long Pham

Art Unit

2814

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 17 June 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 23, 24 and 26-32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 23, 24, and 26-32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

***Response to Arguments***

1. Applicant's arguments with respect to claims 23-24 and 26-32 have been considered but are moot in view of the new ground(s) of rejection.

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claim 23 is rejected under 35 U.S.C. 102(b) as being anticipated by Holloway et al. (US patent 4,845,047).

With respect to claim 23, Holloway et al. teach a process for fabricating an integrated circuit, comprising (see fig. 1 and col. 6, lines 45-55):

providing a doped substrate having a source, a drain, and a channel extending from said source to said drain, wherein said source and said drain do not include a lightly doped regions;

forming an oxide over said channel, said oxide being defined by a width, wherein said oxide and said substrate forma an interface that is substantially planar; and

forming a gate structure over a substrate, said gate structure having a length of approximately 1.25 micrometer and being coextensive with said width of said oxide;

Further with respect to claim 23, since Holloway et al. teach the integrated circuit as claimed, the interface between oxide and substrate would be substantially stress-free.

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 24 and 26-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Holloway et al. (US patent 4,845,047) as applied to claim 23 above, and further in view of Adan (US patent 6,288,425) and Ueno et al. (US patent 6,815,295).

With respect to claim 24, Holloway et al. fail to teach that the channel is formed before the source and drain are formed.

Adan teaches a process in which channel region is formed before source and drain are formed. See col. 2, lines 50-65.

It would have been obvious to one of ordinary skill in the art of making semiconductor devices to incorporate Adan's above teaching into the process of Holloway et al. to improve manufacturing yield. See col. 8, lines 40-45.

With respect to claim 26, Holloway et al. fail to teach that the channel is doped by a halo implantation.

However, doping channel by halo implantation is well-known in the art.

With respect to claim 27, Holloway et al. fail to teach that the gate length is in the range between .05 to .25 micrometer.

However, it would have been obvious to one of ordinary skill in the art of making semiconductor devices to reduce the length of gate because it is known that shorter gate length would achieve device scaling.

With respect to claim 28, Holloway et al. fail to teach gate oxide comprises of a first oxide layer and a second oxide layer.

Ueno et al. teach a process in which a gate oxide comprises of a first oxide layer and a second oxide layer. See col. 28, lines 15-25.

It would have been obvious to one of ordinary skill in the art of making semiconductor devices to form gate oxide made from a first oxide layer and a second oxide layer to reduce the processing steps. See col. 28, line 38.

With respect to claim 29, Holloway et al. teach a spacer formed adjacent the gate structure.

However, An omission of an element and its function if the function of the element is not desired is obvious. See Ex parte Wu , 10 USPQ 2031 (Bd. Pat. App. & Inter. 1989).

With respect to claim 30, Holloway et al. fail to teach the range for the thickness of gate oxide layer.

However, it would have been obvious to one of ordinary skill in the art of making semiconductor devices to determine the workable or optimal value or range for the thickness of gate oxide layer through routine experimentation and optimization to obtain optimal or desired device performance because it is a result-effective variable and there is no evidence indicating that it is critical or produces any unexpected results and it has been held that it is not inventive to discover the optimum or workable ranges of a result-effective variable within given prior art conditions by routine experimentation. See MPEP 2144.05.

With respect to claims 31 and 32, Holloway et al. fail to teach the ranges for the concentration of the source, drain, and channel.

However, it would have been obvious to one of ordinary skill in the art of making semiconductor devices to determine the workable or optimal value or range for the concentration of the source, drain, and channel through routine

experimentation and optimization to obtain optimal or desired device performance because it is a result-effective variable and there is no evidence indicating that they are critical or produces any unexpected results and it has been held that it is not inventive to discover the optimum or workable ranges of a result-effective variable within given prior art conditions by routine experimentation. See MPEP 2144.05.

***Conclusion***

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Long Pham whose telephone number is 571-272-1714. The examiner can normally be reached on M-F, 7:30AM-3:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy can be reached on 571-272-1705. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Long Pham

Primary Examiner

Art Unit 2814

LP

1.